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ABSTRACT

A case study of teachers' activity design processes presents early findings from an ongoing study that intends to contribute to a practical theory of activity design that captures and reduces the complexity of integrated activities. The study also points to the kind of support teachers need to reflect a more constructivist perspective in their practice. In phase 2 of the study, a "think-aloud" planning activity was designed that allowed teacher thinking to be studied in a more controlled context and allowed exploration of the finding from phase 1 that teachers do not refer much to individual student needs and abilities. The 2-step think-aloud involved developing a literature-based writing activity and planning a specific writing lesson. Analysis of the transcripts of the think-aloud was guided by an activity design model. Contrasting data from a fourth-grade teacher in an urban school with a substantial number of minority and low-income students and a fourth-grade teacher in a suburban, middle income, largely white school, highlight features of an integrative design process. Results indicated four characteristics of teachers' activity design processes critical in promoting active learning in a diverse classroom: (1) breadth, specificity, and flexibility of teachers' child knowledge; (2) child knowledge plays a central role in constructing the design; (3) designs are starting points for revising instruction and knowledge; and (4) designs provide a framework for assessment of students and the teachers' approaches. (Two initial teacher monologues, the protocols for guiding think-alouds about literature and writing, and 53 references are attached.) (RS)

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DESIGNING CLASSROOM ACTIVITIES FOR DIVERSE LANGUAGE NEEDS

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THE PROBLEM: MEETING DIVERSE LITERACY NEEDS IN THE MAINSTREAM CLASSROOM

Classroom teachers are caught in the middle of two important changes that affect literacy instruction. One is a change in the students found in the regular classroom. The movement to mainstream students with disabilities, together with steady demographic changes in the ethnicity and English proficiency of American students, widens the range of student language and learning needs in many classrooms. Teachers see an increasing range of reading levels and writing needs in their classrooms and find that they need better ways of assessing and meeting their students' reading, writing, and communication needs. The other is a change in the way we view literacy and language instruction. More than a decade of research in reading, composing, and cognitive science has broadened our idea of literacy and our understanding of the complex social, cognitive, and affective processes that come together when children read, write, or communicate with each other. Teachers are being exposed to a host of new ways to approach reading and writing instruction, including literature-based instruction, writing process strategies, and portfolio assessment. While many of these promise to be more student-centered and effective with a broad range of students, these approaches are complex and not easy to put into practice.

At the heart of many of the new programs and approaches is a "constructivist" view of children as active learners who continually reconstruct their understanding of the world through their interactions with text and with other people. Reading, for example, is viewed as a "process of meaning-in-motion where understandings are developed and altered throughout the activity, reflecting an interaction between what the reader brings to the literacy experience and the inherent complexities of the text itself" (Langer, Bartolme, Vasques, and Lucas 1990). Children actively make meaning when reading, writing, or talking. Constructivism extends the developmental perspective of Piaget by recognizing that "learners build conceptual frameworks that are complex, highly organized, and strongly tied to specific subject matter" (Linn, 1987). Earlier work by

Vygotsky (1978) and Bruner and colleagues (Bruner, 1978, 1983, 1986; Bruner, Olver, and Greenfield, 1966) and more recent work on cooperative learning (Slavin, 1990; Slavin, Robert E., N. A. Madden, and M. Leavey, 1984; Tateyama-Sniezek, 1990) and reciprocal teaching (Palinscar and Brown, 1984) support the view that children learn complex thinking best in collaboration with other children. Children gradually internalize important problem-solving processes by engaging in those processes with others. This view of the child as an active learner contrasts with the view that students are passive receivers of knowledge and that their learning develops from the sequential or hierarchical acquisition of skills and bits of information (Novak, 1988; Smith, 1989).

Several consistent ideas about how teachers can support active learning and "meaning-making" in the area of language and literacy include:

- link instruction with students' interests (Hidi, 1990; Krapp, 1989)
- activate students' prior knowledge of the content and the structure of a text (Carrell, 1983; Englert, 1990; Johnson, 1982; Rumelhart, 1975)
- help students make connections between key concepts and procedures (Prawat, 1989)
- help students acquire the cognitive strategies that experienced readers and writers use (Brown, Bransford, Ferara, and Campione, 1983; Garner, 1990)
- model effective learning processes and gradually release students from dependence on teacher support (Palinscar and Brown, 1984)
- foster students' attributions of success and failure to their own efforts (Dweck, 1986; Garner, 1990; Groteluschen, Borkowski, and Hale, 1990)
- encourage classroom dialogue about ideas (Bruner, 1978; Moffett, 1968; Anderson and Palinscar, 1987; Barnes, 1975; Brown and Campione, 1986)
- provide students' "conditional" knowledge--the appropriate contexts for using strategies or concepts (Bransford, 1986)
- focus on a few concepts in depth, rather than "mentioning" many ideas (Durkin, 1990)

THE NEED: SUPPORTING INTEGRATED ACTIVITY DESIGN

There is a strong emerging view that children with language disabilities are particularly in need of instruction that supports active learning. They find it difficult to activate what they know and are less likely to make connections on their own or use the reading, writing, and communication strategies that more effective learners use (Wielkiewicz, 1990). This view is part a reaction to a special education system that has tended to pull students from the more "wholistic" learning experiences of the regular classroom and focus on isolated skill deficits (Rhodes and Dudley-Marling, 1988). The challenge of mainstreaming, from this perspective, is for teachers to help children with varying language abilities develop language processes and skills in the context of active meaning-making. These activities need to be "integrative" in two respects. First, they need to match the specific reading and writing abilities of the students with appropriate instructional approaches (Durkin, 1990). Second, they need to integrate important language processes and skills into a meaningful context, rather than isolate skills or knowledge bits (Iran-Nejad, McKeachie, and Berliner, 1990).

Designing integrated activity instruction for a diverse classroom is no small challenge because of the complexity of language--reading and composing processes--and because of the amount of knowledge of student language abilities necessary for developing integrated activities. Clearly teachers need ways of prioritizing what they must know about their students and methods for managing the sheer cognitive load of planning for a classroom of twenty or more students.

We currently know little about how teachers plan and carry out language activities in classrooms with diverse language needs and abilities and whether they have "natural" ways of managing the complexity of planning for diversity. Nor do we know what kind of planning might lead to the meaning-making processes listed above. While a substantial body of research has described teacher planning practices (Borko, Livingston, and Shavelson, 1990; Clark and Peterson, 1986; Clark and Yinger, 1979; Yinger, 1979), we

are just beginning to link thinking patterns with measures of effectiveness. We need to expand our knowledge of teacher activity design processes in order to know what kind of support teachers need and how best to provide it. We need a practical theory of activity design that can both capture and reduce the complexity of integrated activities and point to the kind of support teachers need in order to reflect a more constructivist perspective in their practice (Fosnot, 1989). We need theories that transcend current artificial distinctions between planning and instruction. The concept of "design" needs to be thought of as a continuous process of elaborating an activity concept, before, during, and following interactions with students. To link research and intervention, we need to articulate such a theory in practical language for teachers.

The purpose of this paper is to discuss early findings from an ongoing study of teacher planning and instruction of literacy activities, which may contribute to such a theory. Titled "Teacher as Composer," the study is being conducted at Education Development Center over a four-year period, in collaboration with three Massachusetts school districts. This paper draws on case material on three fourth-grade teachers, from three different school districts, to illustrate a preliminary model or framework of integrated activity design. Based on this framework and the case material, the paper generates several hypotheses about the kinds of interventions needed to support teachers in designing effective integrative language activities in the regular classroom. These hypotheses will guide continuing research and intervention in the project.

METHOD

Over the past eighteen months EDC has been carrying out an exploratory, school-based study of teacher planning and instruction in language and literacy at the third- and fourth-grade levels. As well as the three collaborating school districts that will be involved in the study over the full four years, EDC will add schools from three other systems to field-test intervention approaches in the fourth year. The project started with the premise that teachers are natural composers of complex learning activities and that

the content and design of those activities are influenced by factors at the teacher, classroom, school, and districts levels. Consistent with this broad view, the project has documented teacher planning and instruction at the micro-level of teacher thinking and classroom teaching and has documented some classroom, school, and organizational contexts that influence teacher planning. We assumed that organizational context data would be important to our understanding of teacher practices and critical to our design of interventions to enhance teacher literacy instruction. To document the organizational context in three systems, we have gathered information about the district and school language/literacy curriculum, current and new initiatives in language and special education, special education servicing models, and formal and informal planning structures among teachers and specialists.

Project time and resources did not allow for the development of ethnographies, but we drew heavily on ethnographic methods to describe teacher language planning and instruction in natural contexts. To describe the organizational context, we conducted intensive interviews with administrators and specialists, attended district level meetings, and collected district curriculum-planning documents. While this data gathering required extensive staff time, we regarded it as a necessary investment to guide our research and intervention over the four-year period. Early interviews, for example, established critical relationships of mutual trust that lay the foundation for gathering sensitive data from teachers over subsequent months.

To document teacher language and literacy instruction at the classroom level, we gathered data in two phases. In Phase 1, a relatively open-ended phase in the winter and spring of 1990, we followed one third-grade and one fourth-grade "focal" teacher in each school as they taught a six- to eight-week curriculum unit, or lesson series, and we conducted a single interview and classroom observation with another third-grade and fourth-grade teacher in each school. All of the curriculum units integrated reading and composing but were highly varied in topic and purpose across classrooms. The purposes ranged from writing a research report on animals, to writing realistic fiction about a

pioneer family based on social studies reading, to a series of discussion, drawing, and writing activities based around a novel. These lessons were documented by observing classrooms (in some cases, multiple observers were used to document small group activities and interview teachers about their background, curriculum objectives, general planning practices, specific lessons, and individual student needs), reviewing curriculum materials, and gathering student work. Over 150 hours of interviews and classroom observation data were gathered across the three research sites.

Analysis of Phase 1 data has been carried out in several iterations, including: (l) summarizing organizational context data by site, (2) developing preliminary summaries of each focal teacher's language philosophy, approach to teaching reading and writing, approach to identifying and meeting individual student needs, and self-reported planning styles, and (3) identifying content themes and discussion processes in collaborative planning sessions at one of the sites.

In Phase 2, in the early fall of 1990, we designed a "think-aloud" planning activity that would allow us to study teacher thinking in a more controlled context and thereby increase the consistency of our data across teachers. We also wanted to explore an emerging finding from our Phase 1 analysis that in talking about how they plan language activities, teachers do not refer much to individual student needs and abilities. In questioning teachers about individual student abilities, we found that they tend to describe global traits ("He has absolutely no comprehension," "If he could just stay on task, he might make a little more progress"), to focus more on social/emotional rather than on academic abilities, and to make few explicit links between the planned activities and student language needs and problems. Further, teachers did not appear to anticipate students' special needs when they described their activity plans, and we saw little evidence that teachers varied their instructional approach to meet individual student needs. Teachers appeared overall to think of an activity, see what happens, and then troubleshoot or reteach students who have difficulty. We thought it possible that in talking about their planning, teachers do not reveal the extent to which they actually

consider student needs in planning activities. We also thought that planning with new materials might require teachers to rethink their assumptions and ideas about students. They might show in an actual planning monologue more than they were able to tell us about their students' language abilities.

Think-Aloud Procedure

The think-aloud protocol is appended (see Appendix B), since the case material draws substantially on that data. The project was guided by three general concerns:

- to make the task naturalistic, i.e., relevant and realistic to the teachers' planning. In this case, because all of the teachers were planning to focus on the American West as a topic during the year, we designed a task around the use of fiction about the westward migration.
- to have the task support rather than intrude in the teachers' curriculum planning. Since the teachers would be focusing on this topic at different times of year, we decided that they could plan a literature-based activity now, but might actually teach it at any time during the year.
- to identify and take into account in our design factors found in previous research to interfere with the think-aloud process.

We formulated several guidelines for developing the instrument that related to three aspects of the protocol: (1) the stimulus materials, (2) the think-aloud task, and (3) our approach to setting the context for teachers. These guidelines are presented in Figure 2. For example, an important guideline for our selection of stimulus materials was that they be new to all teachers so that they would be less likely to draw automatically on established routines (Shiffrin and Schneider, 1977). A key guideline for designing the task was that we focus on the desired level of decision-making. Our own pilot think-aloud in the early months of the study supported the findings of other research that with an increased number of decisions to make, subjects tend to rush through a process of narrowing the task, using a rapid, less thorough decision-making process based on less

information and evaluation (Payne, 1976; Newell and Simon, 1972). With this in mind, we planned a two-step think-aloud process that would proceed from a broad level of decision-making (selecting among several books as the basis of a literature-based writing activity) to a narrow level (planning a specific writing lesson). The teachers would review the same three books, and for the second step we would select the book that was of highest interest to the most teachers. We felt that the validity of the task would be enhanced by teachers being able to choose materials that interested them.

An important guideline related to setting the context for the think-aloud was that we include a set of retrospective questions to use in probing teachers' decisions and get a more complete record of their thinking (Ericsson and Simon, 1980) These would function as an immediate "stimulated recall" and extend our information about teachers' "background" thinking. Questions would be focused on specific teacher statements, in the form of "What were you thinking about at the time when you said . . ." The goal is to have the teacher recall the thoughts associated with that decision. The more immediate and specific the question, the more likely the goal would be met (Nisbett and Wilson, 1977). Given the findings of previous teacher planning research that teachers tend to focus on designing activities, we thought that the retrospective might reveal more variation in the thinking processes underlying their choice of activities.

Criteria for selecting the three books for the first step of the think-aloud included: (l) *novelty*--new to all teachers in order to avoid routinized planning; (2) *relevance* to their present fourth-grade curriculum; (3) *reading level* of low third grade, reflecting a comfortable level of difficulty for students in the three teachers' lowest reading groups, which ranged from second to fourth grade in reading level; (4) *literary quality* of the selections, as evaluated by reading specialists at EDC and children's libraries in the area; (5) age-appropriate *appeal*; and (6) *brevity*--a practical consideration of the time demand for the teachers to review three books.

Each think-aloud took approximately one hour, so that the total amount of design time was two hours. Sessions were tape-recorded and verbatim transcripts were provided that included all verbalizations of the teacher and the researcher. The interviewers also wrote a commentary describing their impressions of the session. Analysis was carried out in several iterations, using an adaptation of "process tracing" (Newell and Simon, 1972; Yinger and Clark, 1982). The general procedure: (l) six transcripts, two protocols for each of the three teachers, were read by three staff members to identify general themes, commonalities, and differences; (2) two staff members reread the protocols for each teacher several times further; and (3) transcripts were marked and cut according to several content categories that included references to students in general or individual students, instructional strategies, language processes, beliefs or assumptions about students, language or instruction, and student outcomes. Analysis was guided by the Activity Design Model formulated by project staff and described below.

AN ACTIVITY DESIGN MODEL

"Activity design" refers to a teacher's conscious and purposeful planning of a classroom learning experience. The concept reflects several connotations, including the idea of mental activity that is purposeful, creative artistry that includes the ability to visualize or draw, and the idea of tentativeness and openness to revision.

The model is based on the assumption, supported by research, that teachers think in terms of activities. It also assumes that while all teachers engage in designing activities, those designs may get written down or remain in the teachers' heads, and they may be fully articulated or more generally sketched prior to actual teaching. Teachers will vary in how much they revise those designs as a result of reflecting on the activity during and following teaching.

Figure 1 pictures the main components of activity design. We will use the model in describing and comparing the think-aloud designs of two teachers, linking that data with

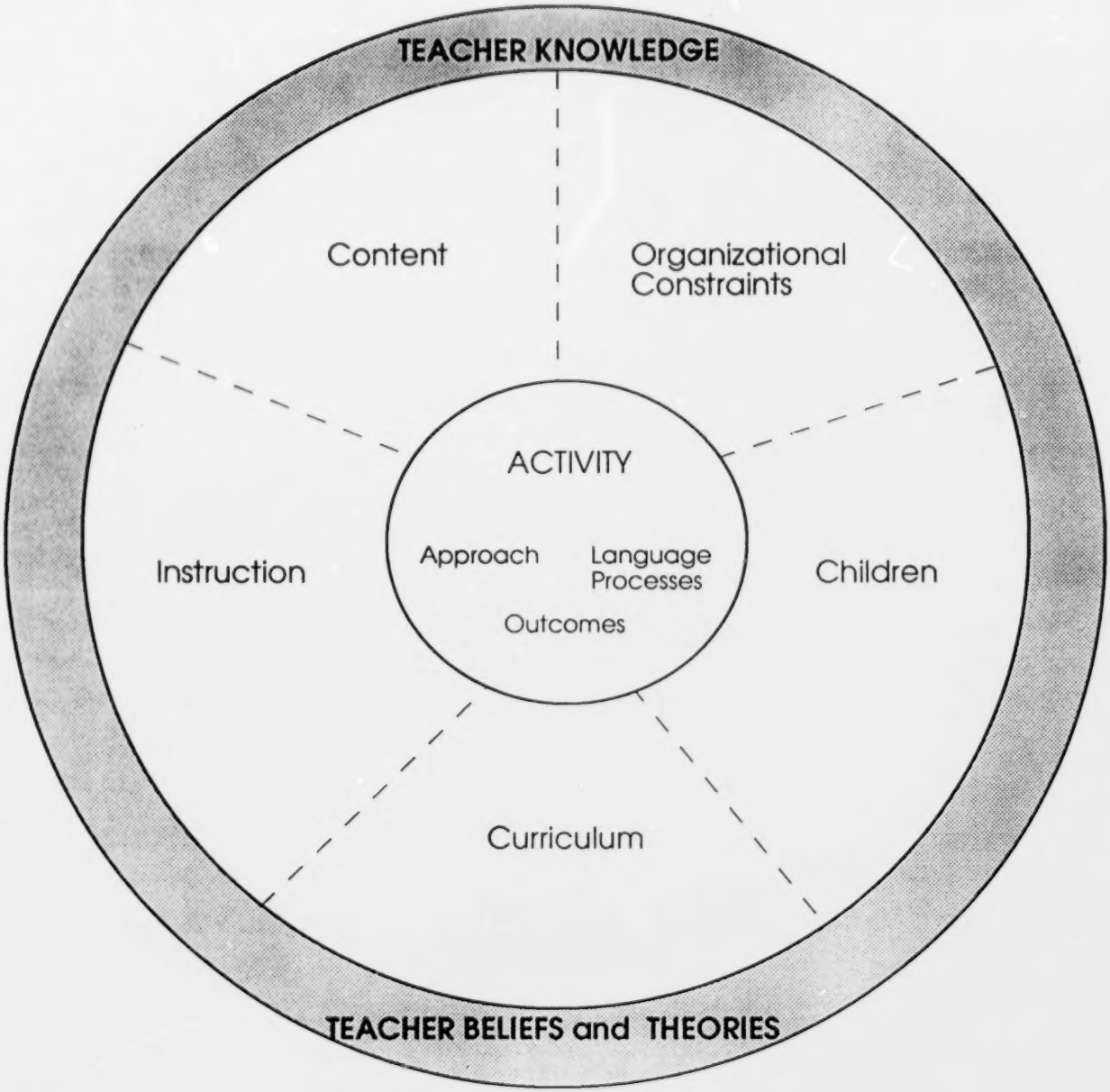
data from Phase 1, in which we observed teachers carrying out activities and talked with them about their planning instruction. We will also use it to generate hypotheses about the characteristics of integrated activity design and suggest guidelines for interventions that help teachers to become more constructivist in their approach to planning and instruction.

"Activity" is used to encompass the range of fairly fluid meanings that teachers attribute to it. It is a definable learning experience, generally bounded by having a beginning, development, and clear point of completion and having one or more intended learning outcomes. It is elastic in duration, for while the assumption is of short duration, even within one class period, it may be used to refer to an experience extending over several class periods. For example, a teacher who assigns students to write a realistic story of a family traveling west as a culminating "activity" in a social studies unit on the westward migration has in mind a longer and more complex activity than the teacher who has a journal-writing "activity" each morning when children come into the classroom. We think the model can be applicable to these variations in scope and complexity.

We identify three important components in an activity design: *instructional approach or teaching strategies*, a set of *language processes that are activated,* and the intended *learning outcomes*. In other words, a design specifies what teachers and children will do, what language processes (reading, predicting, questioning, drafting) are set in motion, and what students learn as a result. In selecting and integrating those components, teachers potentially draw on five areas of knowledge: content, curriculum, instruction, students, and organizational context. The first four cover the three types of knowledge that Shulman (1986) cites as critical teaching knowledge. In the domain of language and literacy, *content knowledge* encompasses, for example, the processes involved in comprehending and composing text, the varied social and communicative purposes of written texts, and theories about the processes by which children acquire the lower-order and higher-order thinking processes involved in reading and writing. Curriculum knowledge encompasses the approaches to literacy development (skills sequence, whole

Figure 1

A MODEL OF ACTIVITY DESIGN FOR LANGUAGE/LITERACY INSTRUCTION



language, literature-based instruction, cognitive strategy instruction) and related published curricula and materials. It also encompasses the learning goals and outcomes that are linked with different curriculum approaches.

Instructional knowledge includes teaching strategies (peer conferencing, reciprocal teaching) and strategies that students can acquire to help them read and write more independently (concept mapping, predicting, brainstorming, self-checking).
Organizational context knowledge refers to the constraints on classroom activities posed by space limitations, scheduling, availability of others to assist the teacher, and parents' and administrators' expectations. This realm is less prominent in the think-aloud data discussed here; it may have been less prominent in teachers' thinking because the teachers were free to design an activity without immediate pressure to carry it out. In contrast, a teacher who "thought aloud" about her classes for the coming week on a pilot basis for us in Phase 1 considered such issues as broken glass on the floor from replacing old windows, the lack of resources in the school for a student having trouble with a violent babysitter, and the lack of time to read books during the school year.

Child knowledge refers to the language and literacy needs and abilities of the students in the classroom and might also encompass students' self-images as readers and writers and attitudes toward themselves as learners. This is a critical area of knowledge if the teacher's purpose is to include students with a wide range of language and literacy abilities in shared classroom learning experiences. Given the complexity of the "basic" language areas of reading, composing, and communicative competence, it is unlikely that teachers will have all of the information about their students that is relevant to any particular learning activity. The teacher's child knowledge, then, needs to be more detailed in areas of high priority, such as vocabulary, reading comprehension, and composing. Those big language areas should also serve to integrate diverse bits of information about students, with that integration contributing to "simplifying" the teacher's child knowledge (Iran-Nejad, McKeachie, and Berliner, 1990).

In each knowledge area, teachers may also draw on metacognitive teaching knowledge (Peterson, 1988), their awareness of and ability to reflect on what they know and how they are using this knowledge in teaching. Teachers may, for example, have more flexibility and options in their activity design process if they are aware of what areas of knowledge they are drawing on and can at times be deliberate in thinking about what they know about language, curriculum, instructional approaches, and the organizational constraints on their teaching.

Individual teacher designs may be influenced by one knowledge area more than others. For example, the scope and sequence of language skills in basal textbooks is still a prevailing influence on most teachers' planning (Durkin 1990). A teacher's idea for an activity may presumably originate from any of the knowledge areas. An activity can originate from the teacher's desire to teach a prediction strategy (instruction) or from some particular knowledge of students. As an example of the latter, a third-grade teacher and a guidance counselor together designed a reading/discussion activity to help a particular boy in the class become more willing to wear his glasses. Teachers may have "implicit theories" and sometimes strongly articulate beliefs and values related to any of these major areas of knowledge. While the research has not sorted out clear distinctions between belief and knowledge or identified the influence of beliefs in the planning process (see Borko, 1978, 1982), we nevertheless assume that this area should be included and further elaborated in the model.

The challenge of the activity design process, according to this model, is that the teacher must draw on relevant knowledge from the five knowledge areas in making decisions that link an instructional approach to a set of "mediating" language processes that are likely to produce a set of valuable intended outcomes.

Our analysis of the think-aloud protocols were guided by our desire to further explore and verify our observation in Phase 1, that teachers did not appear to integrate specific

knowledge of student language abilities into their planning and instruction. With that interest in mind, we used the Activity Design Model to ask these descriptive questions:

- What areas of knowledge do teachers draw on in designing an activity? To what extent and in what ways do they draw on knowledge about their students?
- What components of the activity design (approach, language processes, outcomes) do they elaborate?
  How detailed and elaborated are those components?
- How do teachers link and integrate the different areas of knowledge and the activity components in their design?

The cases that follow draw on data from that analysis to describe two teachers' design processes during the think-aloud. They are selected, not because they in any way encompass the range of variation we have seen in teachers' design processes, but because some of the contrasts between them highlight features of an integrative design process. Each case refers briefly to descriptive data from the Phase 1 data summaries to suggest linkages between the teachers' design approaches and characteristics of their actual classroom instruction. These linkages contribute to several hypotheses about effective language activity design for the mainstream classroom.

TWO CASES: VARIATIONS IN ACTIVITY DESIGN FOR THE MAINSTREAM CLASSROOM

Both Laura and Janet are fourth-grade teachers, Laura in an urban city school with a substantial number of low-income and minority students and Janet in a suburban school in a middle-income, largely white community. Both have more than fifteen years of teaching experience and are valued as effective teachers in their respective school systems. Their cases are organized in four sections: (1) *initial monologue*, which describes their initial, unprompted monologue in the second think-aloud task; (2) *retrospective*, which describes their further thinking aloud in response to brief prompts

from the observer; (3) *learning theories* implicit in their thinking; and (4) *links to their actual classroom practice.*

Laura

Initial Monologue

Laura's first response to the think-aloud task was to select a general activity--journal writing--and then to elaborate on the specific teaching approach and strategies--what she and her students would do. She circled back a number of times to key ideas, firming up strategy decisions. She decided to have students choose a chapter of the book, to write over a five-day period as though they were one of the characters, and to stimulate discussion about the characters' experiences. She also identified some specific language processes to engage in: talking about the feelings of the characters, writing words describing the feelings, and organizing the words into a paragraph (see Appendix A, Excerpt 1). Other than a brief concern about not wanting to give them more work than they could handle, she did not reveal any thinking about her students' writing abilities.

Retrospective

When prompted to "talk about what she is thinking" regarding the instructional decisions italicized in Excerpt 1, Laura reveals the links between her approach and her knowledge of her students. Much of her thinking aloud focuses on the specific characteristics of her students' reading, writing, and general learning abilities that will come into play as they try to write a journal entry about a novel. She doesn't think about individual students in thinking about her child knowledge until prompted by the observer late in the retrospective. Instead, she designs the activity using a composite image or "template" of student needs and abilities relevant to the challenge of writing about fiction. Her low-group template encompasses a number of specific cognitive and social/emotional characteristics of their writing process. The students are impulsive, tend not to focus or

reflect long enough to generate thoughts for writing, and lack confidence in their ability to write. In her own words, "If you just say write, you'll just get a few sentences and well, that's good enough (for them) because they're not really taking the time to think about it and then they don't take as much pride in their work."

Laura also uses a template of her top-group students to highlight to herself what she knows about her low group. She comments that:

> an upper group, you could have them do the five days in one sitting. These children just can't, they really, it's going to be pulling teeth, or they will just dash anything off.
>
> they can sit and work for longer periods of time. Not that they're more creative but what comes out on paper is a better product simply because they've just got more skills.

She also calls up her top-group template in thinking out how to get her low-group students to share their finished journal entries. While the top-group students could confer with each other, the low-group students need an adult presence. She compares templates of the two groups in thinking about the more fragile self-esteem of the low-group and the importance of not having them read their work to students who haven't done the same assignment. The low-group template includes cognitive and social/emotional aspects of the students' writing abilities.

Although Laura apparently does not need to think of individual students in order to design the activity, she readily characterizes several students quite specifically when prompted by the interviewer. She uses individual templates to project how she will fine-tune her approach for two students with special language or learning problems. She predicts how she will need to keep Joseph focused ("because he tends to be very distractable and has such low self-esteem") and help John with his spelling ("because his anxious requests for correct spelling interfere with composing").

Over the course of her design process, Laura's low-group template shapes her decisions about how to scaffold the journal writing. She thinks out each procedure in terms of how it will slow her students down and support them in actively engaging in the book and generating ideas for writing. Because the students rush through a writing assignment without really getting engaged, she will spread out the journal writing over five days to encourage them to gradually build a series of entries. Having the students take the point of view of one of the pioneer boys and facilitating their talk about key events and feelings will help them experience the characters more fully. Writing words that describe or label them will help students articulate their "felt understanding" in writing. Essentially, she uses her child low-group template to help her generate ideas and make specific decisions about her approach to journal writing.

Laura develops her decisions about the best way to support her students' composing by weighing alternatives and making predictions about what would be best for this particular group. She conjectures about the relative value of doing the journal entry in a single sitting or spread out over several days in terms of the effect on student interest:

> I think it would probably, it would be enjoyable (outcomes) for them in small doses of time (approach) whereas if you do it all at once (approach), it might be, start to get tedious, bore them (outcome).

Her thinking frequently takes the form of "If . . . then . . . because" conjectures, as she integrates what she knows about student abilities with her instructional experience and repertoire. In talking about helping them with their spelling, for example, she conjectures that if she were to write down the words they are using to describe their feelings, she could present correctly spelled models for them to use more confidently in their writing. In her words:

> If you write it down for them, (then) they're more...you know, if they say it, and you write it down, (then) they're more apt to use it because they're not afraid of spelling it wrong or then they become a little more familiar with the word so I think I would want to do that just to help them out.

In conjecturing, Laura links the three components of language activities that were identified in the Activity Design Model. Her propositions link the approach that she has formulated out of thinking about her "low-group template" with the language processes that will be activated by that approach and with the learning outcomes that she wants. In the quote above, for example, she is linking her strategy (approach) of "prespelling" their words on the blackboard as they say them, to their tendency to incorporate correctly spelled words into their entries (language process) and their eventual improvement in spelling skills (outcomes). (See Figure 2.)

Other conjectures describe additional expectations and intended outcomes--reading for *understanding* the book, not abstractly but personally, by "reexperiencing" the fears, loneliness, and gratitude when the Indians they expected to kill them brought them food. Another outcome is *fluency* in writing--they will be able to write words identifying their feelings and then integrate the notes into a "full piece of work from each day." In understanding the events and character relationships in the book, she expects they will become more aware of their "preconceived notions" about Indians (who bring the settlers food rather than harming them) and the early settlers (who included black as well as white families). Implicit throughout is a goal that students enjoy the book and that they feel successful ("they just don't feel that good about themselves").

These conjectures usually have an explicit or implicit "because" in them that comes from her child knowledge template. For example, her implicit "because" in the example above is her knowledge that her students generally can't monitor and correct their spellings. To give another example, she later conjectures that if she has her low-group students share their journal entries with her and each other rather than with the top-group students (approach), they are more likely to review and revise their drafts (language process). She is explicit about her "because": their self-esteem is fragile. This proposition articulates the potential negative outcome of having the top group peer-edit with them:

> If you have somebody else who's got more ability (approach), they're reading their work and they'll say, "What's this for?" and "I don't get that," and "This is a mess. I can't understand what he's written" (language/communication process in top group). And there goes their whole self-esteem. See "I really am stupid, I really don't know what I'm doing" (negative outcome). Whereas an adult can say, "Oh, this is probably what you meant," they can ask the questions and get around it (alternative approach), but these kids (top group) just can't.

Conjecturing allows her to explore alternative approaches by projecting or imagining what processes they might set in motion and whether those would result in her desired outcomes.

The outcomes that she values in these conjectures reflect Laura's underlying content knowledge in the language/literacy domain. She integrates into her design her knowledge of the complexity and the interactive nature of reading and the link that oral communication can make between reading and writing. Her awareness of the complexity of the composing process, and particularly of generating ideas and text, underlies her detailed consideration of the multiple levels of support she can provide through time, discussion, visualizing, and note-taking.

Her content knowledge is also reflected in her assumption that lower-order skills enter into higher-order processes of understanding the characters' experiences and can be developed within the context of reading for meaning. When they jot down notes about the feelings of their character during their discussion each day, she can identify spelling problems "so that they won't say 'I don't know how to spell that'" when it comes to writing their paragraph. Note-taking has the specific purpose of helping to anchor and crystalize the feelings that will help them understand the characters' experiences. And nested in the context of note-taking is an opportunity for the teacher to note spelling problems and to expand the vocabulary they use to describe the characters' experiences and feelings.

Figure 2

LAURA'S LANGUAGE

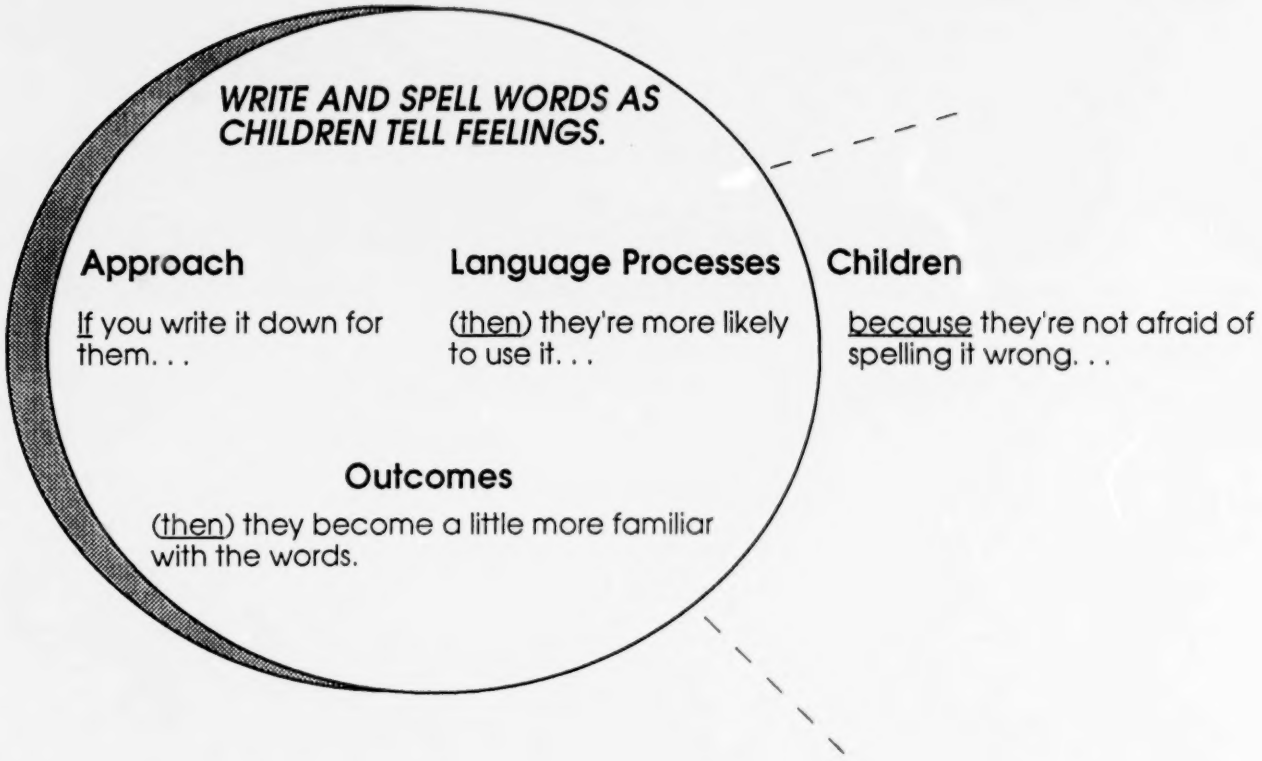

WRITE AND SPELL WORDS AS CHILDREN TELL FEELINGS.
Approach
If you write it down for them. . .
Language Processes
(then) they're more likely to use it. . .
Children
because they're not afraid of spelling it wrong. . .
Outcomes
(then) they become a little more familiar with the words.

Figure 3 uses the Activity Design Model to highlight the constructive nature of Laura's design process. The template of low reading group abilities is in itself a construction that emerges in the context of thinking about journal writing. Though we could know only by studying Laura's planning of other kinds of language activities, it seems likely that she would construct a slightly different template that was related to the particular demands of that activity. Her five-day reading/writing approach is also a construction, a recasting of her instructional knowledge in terms of her template of her low reading group. Many language processes are explicit or implicit in her conjectures, such as experiencing what the character in the book felt and identifying feelings with appropriate vocabulary. The outcomes that evolve in her think-aloud do not proceed from the design of an approach, as in a traditional curriculum design model, but emerge from the design process itself.

Essentially, Laura's emerging design is less a fixed structure than a series of conjectures or predictions about what might or will happen under the varied circumstances that she projects. Her various child knowledge templates simplify and make possible the conjecturing by providing a composite subject for her propositions. The conjecturing process not only constructs an activity, it also serves to elaborate and "reconstruct" her knowledge of her students, both those in the low group and those in the top group. Her realization, for example, that her top group might be inadvertently insensitive to her low reading students expands her view of the areas of their literacy and communication that need growth. Her conjecturing about whether to use cross-group peer conferencing may elaborate her low reading group template to include "conference better with teacher" or each other than with higher-ability peers. In constructing the activity she may also be elaborating her instructional knowledge. As Figure 3 shows her knowledge of peer conferencing may now be more differentiated to include distinctions among several contexts: whole-class and small-group assignments. She thinks aloud to herself that it is in the context of having been given different writing assignments that the top group is more likely to be insensitive readers.

Implicit Theories

Laura's implicit theory about how students acquire real understanding of fiction and how they can express that understanding in writing underlies her design process. She partially articulates her own view of how children "make meaning" from literature:

> It was important with the paragraphing and expressing their feelings, trying to project themselves into somebody else's . . . thoughts and how they would feel. I thought that might help them to get into the story a little bit more, trying to personalize it, how they would feel if they were in that situation . . . I want them to put themselves in the book . . .

"Feeling" is critical to "understanding," and her activity is constructed to take into account these students' particular needs for support in engaging in all of the processes of attending, reading for meaning, empathizing, articulating and crystallizing their feelings, labeling them with text, and integrating them into an organized paragraph.

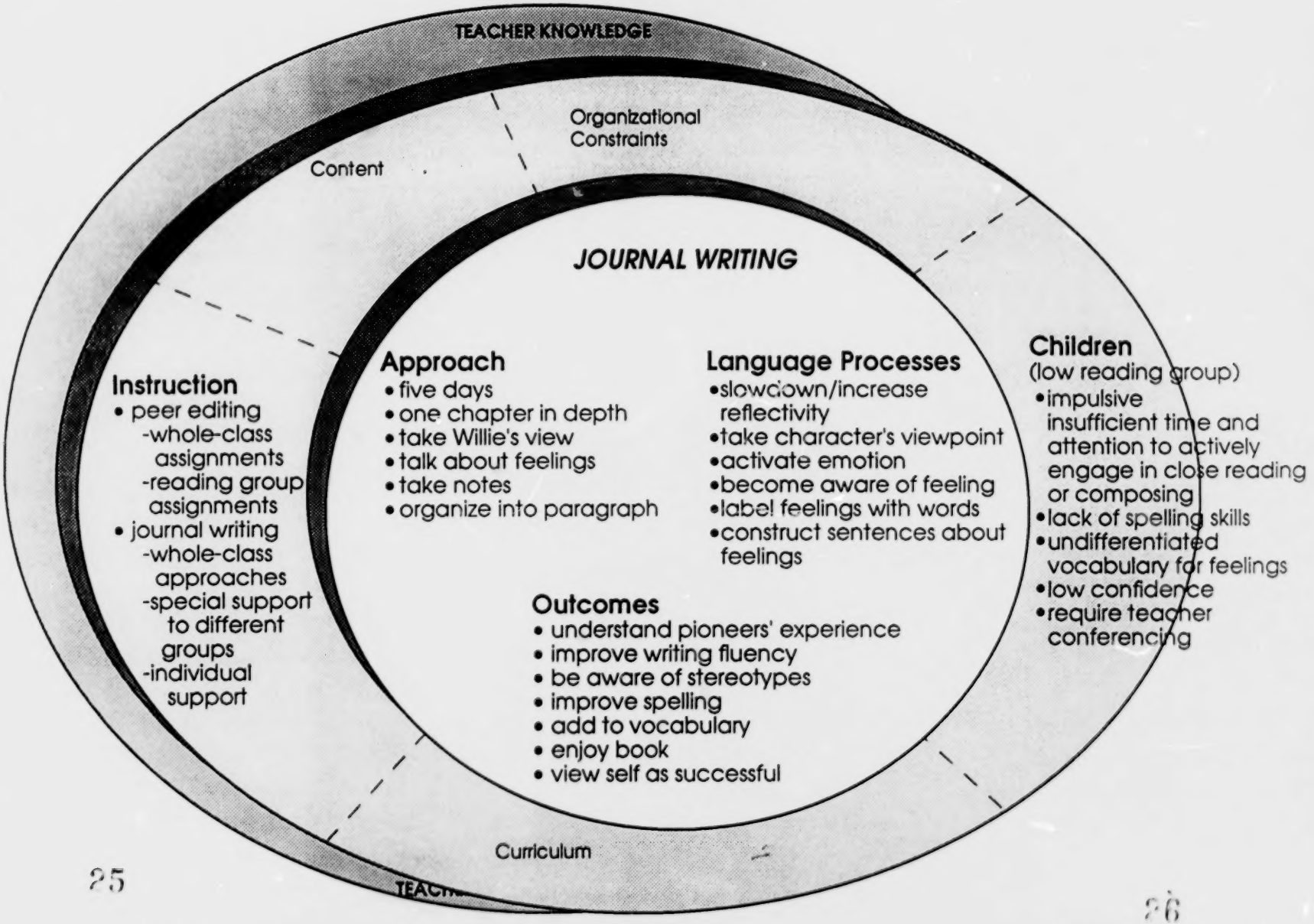
She articulates her belief that her students are basically creative and intelligent ("they're creative, they just don't have the skills") but need special support and attention in building their confidence and self-esteem in order to participate fully in her classroom curriculum.

Links to Classroom Practice

We cannot make any direct causal connections between this data on Laura's design process and our data on her classroom approach to mainstreaming. However, detailed classroom observations, verbatim transcriptions of verbal interactions between Laura and her students during our eight weeks of observation suggest a consistency between the integrative thinking and language theories expressed in her think-aloud and her language curriculum, actual reading and writing activities in the classroom, and views of her own planning and instruction.

Figure 3

LAURA'S ACTIVITY DESIGN



Although she does not talk about her curriculum in the think-aloud, extensive interview discussions about her language arts curriculum from Phase I are highly consistent with the assumptions of her design process in the think-aloud. She describes herself as in transition from organizing her language program around the basal skill sequence to a literature-based program. She has received a grant from her inner-city district to buy trade books and pilot her approach in the coming year. She has fully "internalized" the skills in the basal scope and sequence and believes that most of what she has been teaching through worksheets over the years can be woven into studying literature. She feels she is learning how to integrate skills into literature teaching, but is concerned that she may not be able to prove her theory to the school system in her one pilot year. She feels that she is letting go of the basal as a way to structure her curriculum and will use a series of novels instead.

She appears to operate on the same implicit theory about meaning-making in actual teaching, and also on the belief that if she provides students special support, they can fully participate and think creatively in the classroom. Students were more consistently engaged in classroom language activities in her classroom than in any of the classes that we observed. She used a broad repertoire of whole-class discussion strategies to engage students in active reading for understanding--predicting, visualizing, drawing, connecting events, and developing and revising interpretations. In two literature-based classes, detailed field notes and verbatim transcripts document strong evidence of total class attention to the activity. This was consistent despite several factors related to this urban classroom environment--loud noises of workmen doing repairs and the presence of many students with substantial social/emotional and learning needs.

Janet

Initial Monologue

While Laura's approach to the design task was to elaborate it in one activity, Janet's was to think about two possible activities over the course of the think-aloud period. She did not weigh or compare them but rather shifted between them, thinking about one and then the other and decided that she would do both (see Appendix A, Excerpt 2). Together the activities encompassed a broad range of language and literacy goals. The first was to use the book as a focus for comparing the organization of several books students had read about the westward migration. She thought about using a Venn diagram or developing a matrix that would help students focus on "all the other stories that we've read." In skimming the book, she noticed similarities between Wagon Wheels and other books they have read over several months on the American West. She notes that the mother died in two of the books and that Indians figure importantly in several books. The second activity was to reteach students the skill of finding the main idea in literature, a skill that she identifies as "very difficult for that particular group." Like Laura, in the initial monologue Janet elaborates on the approaches she will use and talks very little about her low-group students except to say that they need more practice in finding the main idea. She sketches an art activity: a large prairie scene on the blackboard with a train of paper-covered wagons whose covers would lift to reveal a list of three main ideas in a chapter.

Retrospective

When prompted to "talk about what she is thinking" regarding the instructional decisions italicized in Excerpt 2, Janet mainly thinks further about the approach she will use for each of the activities. Her thinking about the book comparison activity stays at a general level ("try to fit it in with the other books that we have"). The comparison seems to be less a way for students to integrate their understanding of the westward experience from

all of the books than to remind them of the different elements of the books--prairie animals, Indians, dugouts--and help them recall similar kinds of information across the three books. She is highly specific in imaging the art activity for finding the main idea. Making and writing on the covered wagons would be a motivating way to reteach the skill of finding the main idea, using a procedure she has used extensively before with the whole class. As she describes it:

> I would assign chapter by chapter. I would have them write down three facts that are very important, then as a lesson we'd go through each paragraph and then try to break down the main idea from the first one, try to find a main idea or topic sentence of each paragraph. One or two words that would relate here, you know, does that match with the notes that we've taken on it . . . we did a lot of that with the Indians but this, the bottom ones (students) still have a lot of problems with it. They just pull things out of the air. Okay, I see the word fish, yes this whole thing must be about fish . . .

The fact that the book is easy means that students will not be stopped by unfamiliar words, and they can focus entirely on the skills and the "visuals"--writing paraphrases on each wagon will help them. Because that is a skill that she has taught extensively before, she embeds a familiar "three sentence" routine into the art activity.

Like Laura, Janet uses a group template to think about her design; however, her template includes mainly one feature--student difficulty paraphrasing the main idea from a text. Unlike Laura, she reports that she did think about two individual students briefly during the initial monologue, in terms of specific aspects of the book content that would interest them. She had the thought that one boy in her low group, who is black, would appreciate a story about a black pioneer family; she thought about another student recently from Iran who "might really associate with the story line moving from one area to another and living in a new environment." She speaks again about both boys, in terms of their skill in finding the main idea. But essentially, the book will be good for "any boy who is having trouble finding the main idea."

Janet refers to one characteristic of her low-group students in her thinking about her Venn diagram activity--their difficulty with retrieving information. Although she introduces them to a great deal of information and tells them that it's important to remember, they have difficulty doing so. She uses the metaphor of files that can't be retrieved from computers:

> . . . as they're reading a story um try to look at the behaviors of the animals and have them remember it. Say to them, remember, I want you to remember. This is going to be important for later, so put that way back. I think if you say that to children, when you go into their little computers and you try to retrieve it, they've already put it on hold.

She thinks that reading the book may help them retrieve the information about animals, Indians, and the pioneer experience that they have "filed way back." She implies that remembering information will be her intended outcome for the Venn diagram activity, and mastering the skill of extracting the main idea from text will be her intended outcome for the art activity.

Janet's design is less "constructed" than Laura's. As Figure 4 suggests the approach she uses in her design is drawn whole cloth from her instructional repertoire. Her child template is cast in terms of students' deficit in the skill that she plans to teach, and that template is not used in this design to modify or adapt her general approach to the specific needs of her students. In contrast with Laura, her instructional approach is not broadened as result of this design, nor is her child template. Also in contrast with Laura who constructs her design through conjecturing about relationships between her approach, her child template, and the various elements of her design (approach, language processes, desired outcomes), Janet thinks about the approach largely in isolation from specific information about her students, or the language processes and specific outcomes of the activity. Janet's language includes many global statements about her approach ("We'll do a matrix of those books," "You definitely can relate it") that are not related to the other design elements (Figure 5). She designs the activity outside the context of a specific knowledge of her students' reading and writing abilities. The

Figure 4

JANET'S ACTIVITY DESIGN

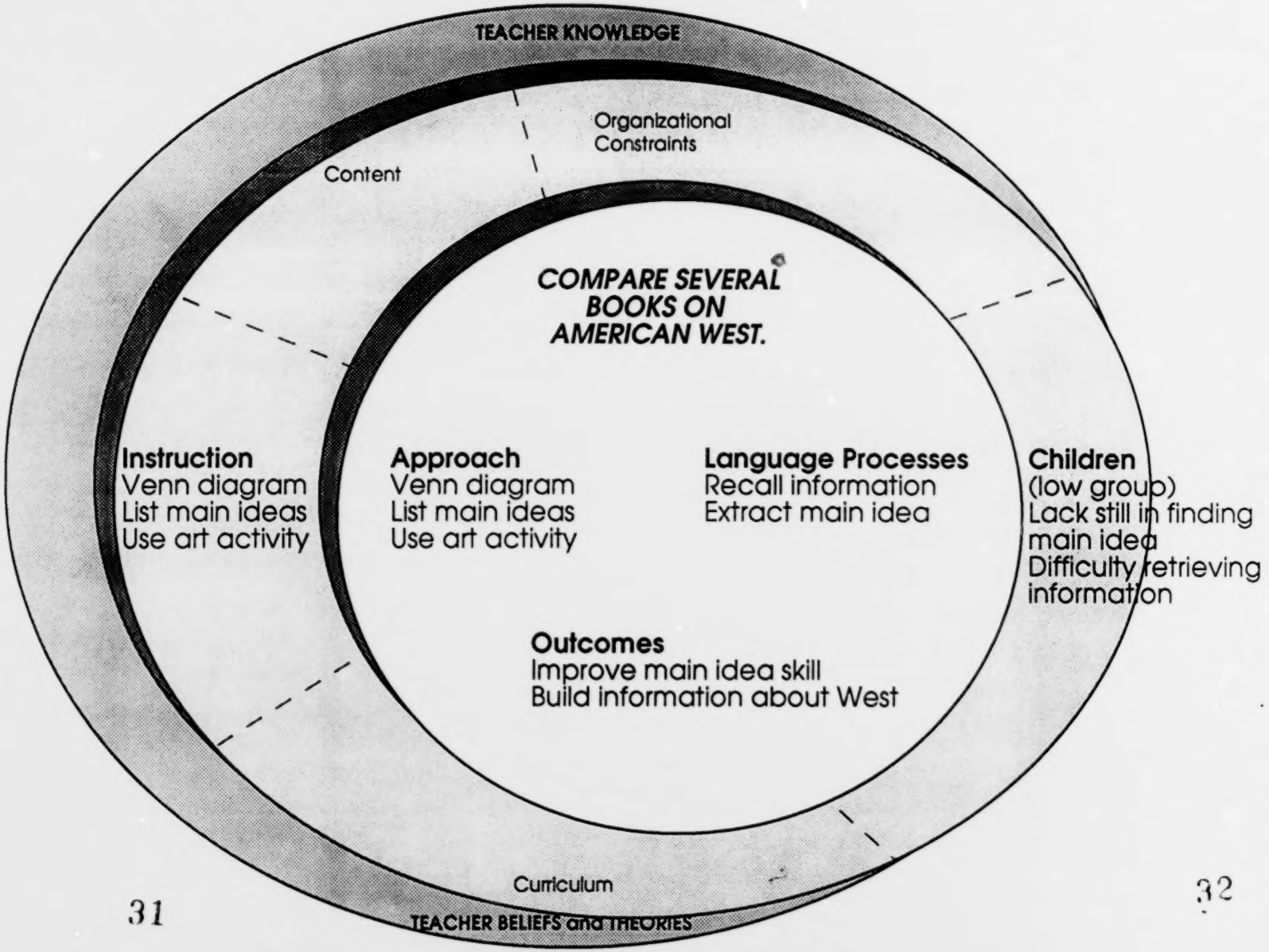
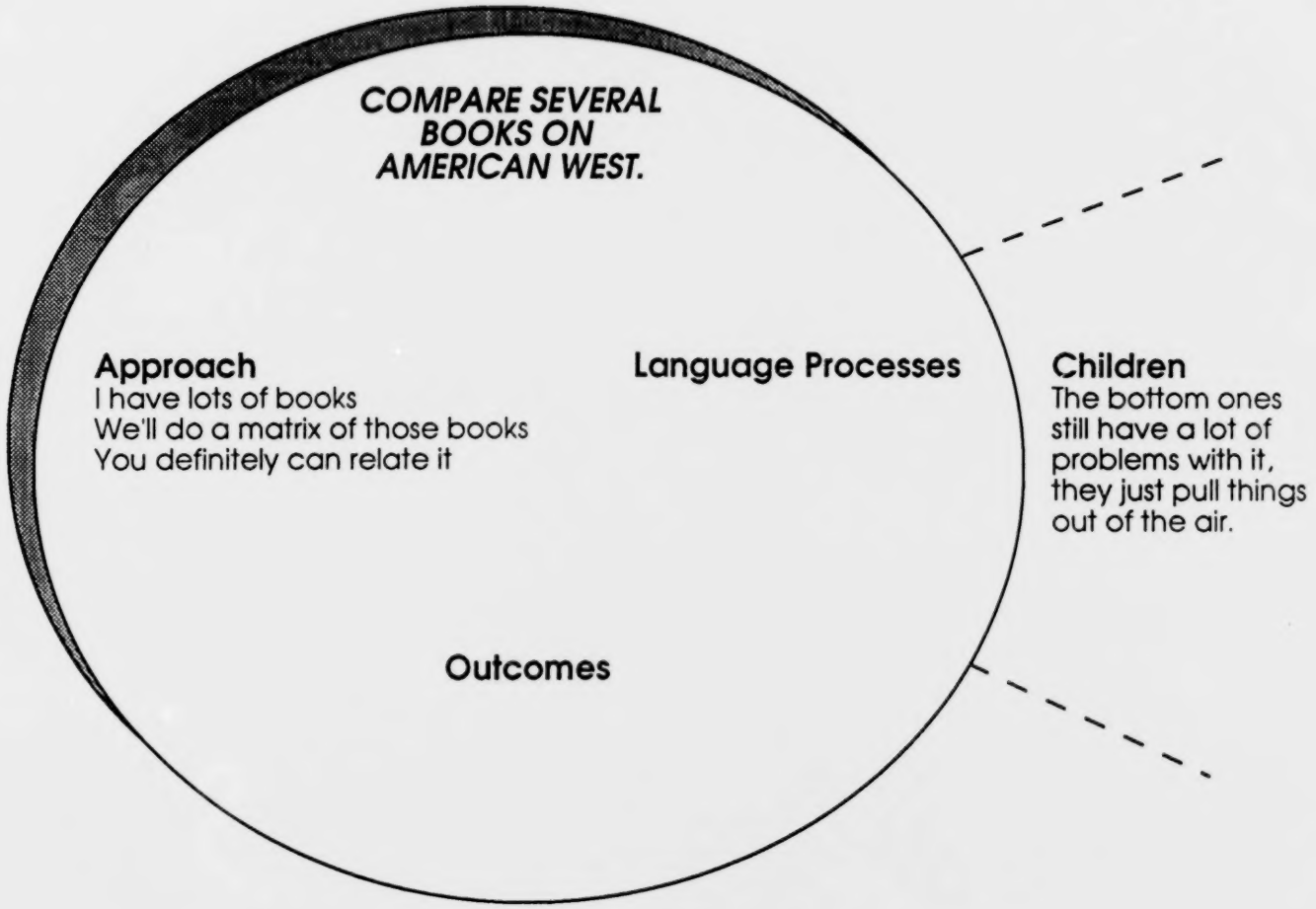


Figure 5

JANET'S LANGUAGE


COMPARE SEVERAL BOOKS ON AMERICAN WEST.
Approach
I have lots of books
We'll do a matrix of those books
You definitely can relate it
Language Processes
Outcomes
Children
The bottom ones still have a lot of problems with it, they just pull things out of the air.

lessons that she projects involve reviewing information and skills out of the context of the larger themes and meanings of the book. Her plan isolates skills of paraphrasing from real meaning-making in reading.

Her computer metaphor and focus on the main idea reflect something of her underlying content knowledge in the language/literacy domain. Her "main idea" activity reduces a highly complex process to a routine unlikely to be effective for most children. Comprehending text is a complex process that generally requires children's getting the gist of the whole text or story before focusing on smaller parts. Comprehension is likely to require extensive rereading and talking about the book to help the child connect events and characters. Many children and even adults (Pressley, Ghatala, Woloshyn, and Pieir, 1990) have difficulty extracting and verbalizing summaries of short or long texts. And texts may embed many ideas (Allen, Michalove, Shockley, and West, 1991). Her difficulty elaborating the Venn diagram activity may in part reflect a lack of knowledge of text structures and story features that would provide a framework for comparing the stories about the West that students have read. And her "resistant computer" metaphor suggests a knowledge of content reading as storing information rather than building a schematic knowledge of historical periods. That would require building connections among the pieces of information about Indians, animals, and pioneer families.

Janet's design reflects an ambiguous view of language arts curriculum. On the one hand, her activity centers on literature and she is highly concerned with pulling together her students' experiences with literature. On the other hand, the intended outcomes--isolated skills of remembering information and getting the main idea--are more characteristic of a basal scope and sequence than of an integrated, literature-based approach. Writing is used to record similar kinds of information and to exercise a difficult paraphrasing skill rather than to help students build connections among ideas.

Implicit Theories

Janet's design reflects more of a hierarchical, skill-building view of language and literacy development than a constructivist one. Her computer metaphor echoes that theory in suggesting that children learn by storing facts and information rather than by constructing their understanding of the world. The theory of instruction reflected in her design is the importance of review, reminders, and practice, to master skills, and remember and to retrieve information.

Links to Classroom Practice

Observation and interview material from Phase 1 present a picture of Janet's practice that is consistent with her activity design. Janet is interested in knowledge building and skill development. She is articulate about her views on language and particularly language curriculum. She talks about the importance of providing a rich language environment that develops skills in the context of teaching for understanding. It is more difficult for her to translate her intellectual understanding about language into classroom practice, however. Janet's curriculum development process is one of gathering rich "files" of materials around themes of interest to students. As she puts it, she "dumps" everything she can find into the boxes and pulls it all out when she feels she has a enough for a thematic unit. Her plans stress inclusion and quantity and incidental learning but rarely have a structure or an organizing set of ideas. She "gives them a lot" and frequently uses phrases such as "touch as many bases as you can," "having choices," and "throw that in."

Janet encourages broad linkages across her rich smorgasbord of information and ideas. She expects her students to find and make connections among all of the topics and materials and "bits" that she brings into the classroom. While the more able students are likely to be able to do this, the work that we gathered from students with reading and

writing difficulties suggested that the students with special language and learning needs were not able to make meaningful connections.

Within those projects, the focus of specific reading activities was frequently on extracting the main idea, in both the upper and lower reading groups. In a research report unit that we observed for several weeks, the focus was on gathering information about animals and on following a series of report-writing procedures. We observed virtually no discussion of the larger themes or content of the books that students were reading. They were extracting "bits" of information about their animals and then summarizing those bits into paragraphs.

Janet's and Laura's classrooms are both stimulating classrooms to be in. Further, their designs reveal in both teachers an intense professional interest in motivating their students and in making learning rewarding. At the same time, there is a marked difference in the level of engagement of students in the two classrooms. While Laura's students were engaged at an extraordinary level, the students with special language needs in Janet's classroom were frequently inattentive and moving around the classroom. While Laura was continually drawing students back into the listening, reading, thinking, or drawing process. Janet's approach was to manage students' physical behavior and general attention by setting a behavioral goal for each student in terms of staying at their seat or completing their work.

IMPLICATIONS FOR RESEARCH AND INTERVENTION

The two cases together point to several characteristics of teachers' activity design processes that may be critical to promoting active learning in a diverse classroom group.

Breadth, Specificity, and Flexibility of Teachers' Child Knowledge. The teachers in both cases, and other teachers we have been studying, seem to intuitively use the collective

student template in their planning. Teachers vary considerably, however, in the content of those templates and in the ways they use them in the design process. Both teachers' child templates encompassed both cognitive and social/emotional issues, but Laura brought a broader template that encompassed many levels of language processes: higher-order comprehension and understanding processes as well as spelling, for example. The template that Janet brought to her design focused on a few language skills. Laura's template was more specific around the language skills involved in reading and writing about literature, while Janet's was a one-dimensional concept of "getting the main idea." In fact, many of the problems of impulsivity, focus, and attention that Laura identifies as barriers to journal writing are likely to be contributing issues in comprehending the main ideas in text. Looking across the Phase 1 and Phase 2 data, the two teachers differ in the flexibility of their child knowledge. The problem of finding the main idea comes up in many contexts for Janet; Laura's discussions of her students call up varied abilities, depending on the kind of language activity.

Child Knowledge Plays a Central Role in Constructing the Design. Regardless of where an activity idea originates, it has less chance of engaging all students if needs and abilities are not considered in designing the specific approach. While Laura's child template "drove" her design, it was really Janet's commitment to particular skills and an instructional routine that influenced her design.

Designs Are Starting Points for Revising Instruction and Knowledge. Janet's ideas about her students' language needs and abilities do not develop over the course of this design, although they might in other design contexts. In contrast, Laura's child templates become further elaborated in the design process. If her predictions and conjectures also serve as frames for reflecting on her activity while or after it happens, her knowledge of her students and her instructional repertoire may expand as a result.

Designs Provide a Framework for Assessment of Students and of the Teachers' Approaches. The outcomes that emerge from thinking about their students needs *in the*

context of this particular kind of activity can serve as an "audit" (Bashir 1991) to guide teachers' assessment of the activity and the effectiveness of their instructional method. The more articulated the propositions, the clearer a structure the teachers bring into interactive planning during teaching and reflecting on their practice afterwards.

These cases suggest four factors that influence the extent to which teachers are likely to reflect these characteristics in their activity design.

1. Content knowledge. We hypothesize that some of the teachers we are studying have less differentiated child templates, in part because their knowledge of language and literacy is not sufficiently differentiated. At the level of practical application, Laura knows that journal writing entails slowing down to visualize details and articulate feelings in writing. That knowledge about reading and writing makes the information about her students' reflectivity or impulsivity important.

2. Prevailing curriculum in the school and district. Both teachers described here are in systems that are in transition in their language arts curriculum organized mainly around a scope and one organized around sequence of language skills and a more literature-based program. Both of their systems still use tracking and up to four basal series in some classrooms; at the same time, some teachers are moving away from basals to literature-based instruction and to "whole language" philosophies. The teachers above, like most of the teachers we are studying, are struggling with how to integrate new ideas about language with their commitment to the important sub-skills of reading and writing

3. Cognitive style. It is our hunch that in addition to curriculum and content knowledge, teachers' cognitive styles are an important and as yet unexplored critical factor in their activity design process. Both Phase 1 and Phase 2 data suggest that Laura overall has a proclivity toward more detailed, comprehensive, and analytic planning, and that Janet tends toward more global, "bottom line," and associative planning. Research on cognitive style (Jelsma, 1989; Messer, 1976; Nisbett and Wilson, 1977) particularly work on

impulsivity and reflectivity. Yando and Kagan (1968) find that these dimensions of cognitive style are not related to intelligence and appear to be consistent across a variety of problem-solving situations. There is research to support that impulsivity is modifiable. It seems highly possible that differences in cognitive style underlie some of the variation in the elaborateness and flexibility of teachers' child templates and design processes.

4. Opportunities to reflect with others. Separate from differences in their approach, the think-aloud task encouraged both teachers to elaborate the efficient set of "bottom line" decisions in their initial monologues. Minimal prompts, focused on specific elements of the design approach and the presence of a dedicated listener, resulted in extensive further elaboration of the design.

These cases, and the others not discussed here, form only a starting point in understanding teachers' activity design processes. Further research is needed in order to know how teachers may draw on the five areas of knowledge in the Activity Design Model, in contexts other than the think-aloud activity described here. The design process may be very different, not only for different teachers, but at different times of year and for different kinds of language goals.

We are currently exploring our conjectures about the kinds of approaches, thinking/learning processes, and outcomes that will help teachers become more "constructivist" in their design and practice. With the above findings and hypotheses as a starting point, we are working with teachers in designing language activities for classroom groups with diverse language needs. Our approach includes building content knowledge around key concepts in language (e.g. "generating text"). It also involves building both instructional and child knowledge through group and individual conjecturing about what will work with varied language needs. It includes learning how to use conjecturing as a framework for designing embedded assessment and revising our collective knowledge of children and language instruction. If we are successful, it is because in our intervention research, we are applying what teachers are teaching us about constructive design.

APPENDIX A
Excerpt 1. Laura's Initial Monologue

Um. I can possibly do *journal writing* since we do write in journals. I can possibly, this is one thing I'm thinking. Um. All right. I can have them do journals and make them be one of the children that . . . All right. This told . . . this is told by Johnny, so I could have and there's Willie, Willie's little brother, Johnny. I could have them write in journals and say *we'll keep a journal for a week*, possibly, or um I don't want to have too many days worth of work . . . because it would be too much for them. But, I could have them keep a journal and they can have it either, say on a Monday through Friday and then *tell their feelings* as Willie or Willie's brother. . . . There are, let's see, all right there are four chapters. I would, I'm gonna let them choose the chapter they want to do. They can do Indians, Chapter Two, because they probably would like Indians. In this chapter, it talks about how difficult the winter was so they could write one day telling about how cold it was; another day about lack of food and, if they're doing Johnny or Willie, about the supply train not coming and the Indians, cause they kind of like Indians. Yeah, that's what I'm going to do ..have them write a journal for about five days of their feelings *as if they were Willie or Johnny*. I think we would have to *do some note-taking* and spend some time just writing down some of their feelings and then organizing it into more of a journal. Could even have them...probably with this group, *I would have to kind of steer them into organizing it*. Say, day one, let me see, all right day one, um express their feelings about how cold it is, not being able to hunt or fish, knowing all they had was cornmeal mush . . . the fifth (day) we could talk about looking forward to spring because the next chapter is moving on, about looking forward to spring and how their father felt about wanting to move on and what some of his plans were and how they felt about moving on and, and I don't know if this might be too much . . . I think I would keep it to those five days we could, each day we could possibly work on one of the entries in the journal. And that, I think I would leave it at that. But just as part and basically, their reactions and their feelings if they were keeping a journal, as one of those two boys. That's it.

APPENDIX A

Excerpt 2. Janet's Initial Monologue

I think I'm gonna skim through it for just a few minutes, if that's okay. Just so I can get an idea. I see something here that says a letter and as far as *a writing activity concerns sometimes a letter* back would really be nice. So I don't know what they mean by that. So I'm just gonna kind of skim through it if that's okay. (I: okay)(Pause) This is very much like um, have you ever read Sara Plain and Tall? (I: I've heard about it, I haven't read it.) Well, we're reading Sara Plain and Tall, and it's a little higher level than this, maybe the next level up I would say. And if *they read this first and then read Sara Plain and Tall,* because I think, I notices that in Sara Plain and Tall the mother had died in---an article a little----. the father sending an article in the paper for a um a new wife. And he's sending it to Marie and in this story it seems to be the mother has died and um I don't know what's coming next, but it could be that how they could relate to one story and another and parallel it. And there's a whole kind of visual thing that you could do with them, you know, *a Venn diagram* to parallel a story. How is this story alike? How is this story different? You know to do it with visual circles that overlap each other so that the things that are alike would go in center of that overlapping and things that were different would go in either ends and titles of the story. So that as a precursor to you know a writing activity you would need something to do that would be a good...(pause, reading) This is about a Black family (pause, reading) I have a of of books that this would parallel with and I think that I might you know, focus in on all the other stories that we've read. Since this is such a quickie you could easily do something like that because it would take no time at all to read this. (pause) And since we're doing Indians, the next chapter is Indians. (pause, reads) Something else too for, you know, again, it's trying to get them to get the main idea. Having them read each chapter and then write three things that happened in the chapter and put it in sequence and trying to get the idea out of that very much like I did last year. (reads) That's always the hardest thing for them to do. (Pause) Okay, we've already learned about the Osage Indian (reading), so there's a lot of parallel that can go on with this book. (pause) I think *I have to do something a little more sophisticated* though because the story is although it's not a simple story the reading there is no vocabulary that they're not (long pause). You know I think I would first go through with the Venn diagram and maybe do a matrix with the different books that we've read and different sections of the book and how they're alike and how they differ, and then um I think what I would do is since I'm really working on a *main idea* now is I'd probably have--they love art things and I have a huge bulletin board actually it's a huge blackboard where they can draw in chalk certain scenes and we could put out a huge prairie would be the main thing and then they could have the different chapters in this book and write little paraphrasings of that chapter, maybe play a game with it. What came first, you know a sequencing kind

of thing and then you know, keep it, *a paper keep it folded over the different chapters* and underneath they have written a little story about each chapter and replaced it as they pass through the story cause it's like Wagon on Wheels, so we'd have like a little, so it would be like a little wagon story up top and um going across what happens to the family at in each station for there is something fun for them at the end. So I do two things, I do the Venn diagram that's related to other stories that we've read so that they can parallel it, and um relate it. The Indian part the Indians what we know of the Osage. And then do the diorama of that you know blackboard um travels through the story and have children write using their own ideas like that we've worked on so um to get that I think that while they're reading the story they're going to write three things and put them on the board that are important for each just so that they can remember the story without having to go back to it and then from that make their little wagons and um they're story written on a piece of paper that's . . . so as you find out about the story you just lift up could even be like the little covered wagons lift up the cover you could get very elaborate but I definitely relate it to the other stories that we've done because it goes one way. Deedle-dum. That's it.

Education Development Center, Inc.
Teacher as Composer Project
November, 1990

PROTOCOLS FOR GUIDING A THINK ALOUD ABOUT LITERATURE AND WRITING

This protocol was specifically designed to identify the extent to which teachers think about individual students' needs when they are planning a reading-based writing activity. We developed the think aloud as a two stage process. During the first stage, we gave the teachers three books that we had deliberately selected to appeal to their lowest reading group. The teachers were asked to think aloud about their low group students while they reviewed the books and ranked them from most to least preferred. The task of the second think aloud was to plan a writing activity related to the children's reading of the book that would benefit the writing of each child in the low group.

This document includes:

- Observer's Script for Guiding a Think Aloud Training and for Book Selection Think Aloud
- Observer's Script for Guiding a Writing Lesson Think Aloud
- Guidelines to the Observer
- Think Aloud Illustration

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Teacher as Composer Project
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OBSERVER'S SCRIPT FOR GUIDING A THINK ALOUD ABOUT LITERATURE AND WRITING

Session One: Think Aloud Training/ Think Aloud Book Selection
[Time: 40 minutes]

INTERVIEWER INSTRUCTIONS

This is the script to be followed in conducting the first think aloud. Before starting the think aloud be sure you have reviewed the Guidelines to the Observer. As the Guidelines state, these directions should be presented to the teacher exactly as they are scripted.

OPENING STATEMENT

I'm looking forward to being with you as you think aloud about some new material for your 'low' reading group. I had mentioned to you that I would bring three books. The purpose of this meeting is to have you review them and select your first, second and third choice for use with your **'low'** group. We have tried to select three books that have appeal for fourth graders and that are within the range of your students' reading abilities.

We selected books about 'the West' since all of the teachers we will talk with are planning units on the West of some kind this year. Whether you decide to use this book and the ideas you come up with, of course, is up to you, but we are requesting that you approach the task as if you **will** use the book in your class with your **'low'** group.

TRAINING

Reviewing and thinking about a book, of course, is something you've done many times. This time I am going to request that, **as you are making your selection**, that you **Think Aloud**--that you verbalize **all** of the thoughts that enter your mind.

To give you an idea of what I mean, here is a transcript of a Think Aloud that was done by one of the fourth grade teachers from our project last year. She has given us permission to share it.

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Give the teacher 2-3 minutes to read and react to the transcript.

When the teacher who is speaking in the transcript first read this herself, she laughed at her 'ums' and 'hmms.' Our response was that those 'ums' were great! It meant that **her mind was on solving the task--not on us--not on how she sounded--she was focusing** on all the things she had to think about to figure out how she would work with the book.

The teacher also helped us think about how to make this kind of think aloud procedure comfortable and productive for other teachers. She suggested that we tell them "to try to forget about what people think" and "to just **get into the planning.**"

As you can see, the result is not smooth and polished the way a speech might be; nor is it even as orderly as a conversation. She said that "it would be good for others to know in advance that the 'choppiness' is okay."

We asked her also about how she felt about doing this kind of procedure. She said that "knowing that the people on the project are truly **interested in what she thinks** and the way she **naturally** does things" has made her feel "relaxed." She shared that it was important for her to know that there has been "no evaluation or criticism;" no preconceived idea of what "planning should be;" just an appreciation of "learning about how she's planning in the real world with all of its demands."

Do you have any questions so far?

THINK ALOUD DIRECTIONS

Here is what I would like you to do:

Please focus your attention on the books. As **soon** as you begin to look at one, begin to talk about what you are looking at, or the **thoughts** that enter your mind about the material; **anything** that enters your mind. Think out loud; verbalize your thoughts. Try to **say out loud <u>everything</u>** that passes through your mind as you do this task. Attempt to **ignore me**; pretend that you are **<u>alone</u>**, that there is no audience to consider. Even if it feels rude, pretend that I am not here. If you are not speaking for a minute, I may ask you what you are thinking. Even then, try to go back to ignoring me rather than 'answering' me. When you are reading to yourself, take as much time as you would naturally need. Do not be concerned about being silent during reading. I will not ask you to think aloud then. If you are comfortable sort of "muttering" as you read and saying aloud thoughts that occur as you read, that would be fine. Begin, and continue until you feel satisfied that you have arrived at your choice for first, second and third book for use with your low group. Remember, we are interested in **everything and**

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anything you are thinking. **All** your ruminations and considerations are of value.

Do you have any questions?

Here are the books. Please begin talking as **soon** as you look at them.

If the teacher lapses into silence other than when she is reading, say: "Please think aloud."

CLOSING STATEMENT

Thank you for your flexibility in carrying out this procedure. You have done a terrific job. We will keep your rankings and will match your priorities with those of the other two fourth grade teachers who are participating. The purpose is for all of you to work with a book of your first or second choice in our next think aloud session.

Thanks so much for working with us today.

Our next date is _____ etc.

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OBSERVER'S SCRIPT FOR GUIDING A THINK ALOUD ABOUT LITERATURE AND WRITING

Session Two: Think Aloud About the Planning of a Writing Lesson for the 'Low' Group, Related to the Book Selected in Session One.
[Time: One hour]

INTERVIEWER INSTRUCTIONS

This is the script to be followed in conducting the second think aloud which builds on the first think aloud session that was detailed in the first segment of this document. Before starting the think aloud be sure you have reviewed the Guidelines to the Observer. As the Guidelines state, these directions should be presented to the teacher exactly as they are scripted.

OPENING STATEMENT

Your contribution from last session was very helpful. You really did "get into the planning." You thought aloud continually--as you were working on the task of selecting a book that is appropriate to your 'low' reading group. That is exactly what I'd like to have you do again today. This week we will use the same procedure with, of course, a different task.

Alternatively, if the teacher's think aloud process needs enhancement, choose the needed directive as discussed on the observers' training sheet and write it here.

Do you have any questions from last session?

THINK ALOUD DIRECTIONS

We have set aside an hour in order for you to have time to familiarize yourself further with the book and to plan a lesson relating to it.

First, if you would please read this book which you selected in order to familiarize yourself with the story before we begin the Think Aloud.

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Now that you have read the book, the task for the Think Aloud is to plan a writing activity--that is related to the children's reading of this book and-- that will benefit the writing of each child in this 'low' reading group.

So--*Repeat underlined sentence*

Do you have any questions?

I would like to say the **directions for the Think Aloud** again to get us both into the right frame of mind. The task is different this time, but the process is the same.

Please focus your attention on the material. As soon as you begin to think about the material, say what you are looking at, or the plans for the material that begin to enter your mind. Think out loud; verbalize your thoughts. Try to **say out loud everything** that passes through your mind as you do this task. Attempt to **ignore me**, pretend that you are **alone**, that there is no audience to consider. Even it feels rude, pretend that I am not here. If you are not speaking for a minute, I will ask you what you are thinking. Even then, try to go back to ignoring me rather than answering me. Begin, and continue until you feel satisfied that you have planned one writing lesson, for your low group, related to this material. Remember, we are interested in **everything and anything** you are thinking. All your ruminations and considerations' are of value.

OBSERVER RECORDS

During the Think Aloud, record all 'bottom line' decisions or statements made by the teacher (see Observer Guidelines, #8).

RETROSPECTIVE

Allow 5-10 minutes or less; if teacher is still Talking Aloud, give that preference.

Address these probes to the teacher immediately upon completion of the Think Aloud:

When you were talking, you mentioned_____about_____. Could you talk about what **you were thinking at that time** that **led** you to come to that decision?

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This form of question is repeated for all 'bottom line' decisions or statements that you wrote down during the Think Aloud.

After you have completed all specific probes and if there is time, you may ask:

As you think back on the process, are there any thoughts you had <u>during</u> the planning that you did not express?

Is there any additional thinking or planning that you would do next in order to carry out this activity with your low group?

If you had been designing a writing task for your **'top'** reading group today, would you have thought about it any differently?

If so, how?

At any point, during the Think Aloud were you thinking about individual children?

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THINK ALOUD ABOUT LITERATURE AND WRITING

GUIDELINES TO THE OBSERVER

1. *Tape record both sessions in order to document the teacher's original, verbatim statements and to document your own probes.*

2. *Read the directions aloud exactly as they are scripted. They are very explicit (and somewhat repetitive) about the teacher's saying "anything and everything that enters your mind" to minimize the need for prompts or interruptions during the Think Aloud itself.*

3. *In conducting the first think aloud session, do not refer in any way to the second Think Aloud session except at the end, to verify the date scheduled for the second session. For example, do not say* "That's a topic that you could follow up on in our second session." "Next week you'll be planning a writing lesson," or "After you finish thinking aloud next time, I plan to ask you about..."

4. *In conducting the second think aloud session, if the teacher spends in excess of 15 minutes reading the book, request that she complete reading through the content of the story as soon as she can do so comfortably.*

5. *Use your own role carefully to encourage the teacher to verbalize while she is looking at and genuinely responding to the material, recalling related information and forming decisions. It is very important that teacher's reporting not be "removed" from the decision making. The hope is to hear subgoals or steps in the decision making process, e.g.,*

   "Um, on this, they might have more trouble" [LL]
   "The problem I'm having with this is..." [LL]

   Here are examples of teacher behaviors that would interfere with the think aloud process and prompts that you can use if they arise:

   - *If the teacher seems hesitant about whether she is "doing it right" and seems to need feedback, say,* "You're doing a great job, just continue to Think Aloud."

   - *If the teacher addresses or looks at you, or begins to explain something to you or inform you, say,* "Even if it feels rude, pretend that I am not here."

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- *If the teacher is silent for a long period of time (i.e. more than 20-30 seconds) followed by a* ***bottom line*** *decision, e.g., "Okay, this will work" or "I'll have them to do this," then prompt with* "Just think aloud as you're looking at the book."

- *If the teacher tends to lapse into silence frequently, say* "Please think aloud."

It is helpful if the Observer avoids eye contact by looking down and writing notes, even if the notes are for no other purpose than to remind the teacher that your role as observer is to document, not to participate in the Think Aloud.

6. *Prompt the teacher only if necessary. The goal is for the teacher to maintain a focus on her thinking and planning about the materials as the* ***primary*** *task. The goal is to have no prompts at all. But if prompts become necessary, as mentioned above, they should be as general and non-directive as possible, to say, e.g.,* "uh-huh"--"good"--"Please continue to Think Aloud."

7. *If the teacher has difficulty focusing on the task and verbalizing while actually working with the materials address the specific behavior that is defeating the purpose by using prompts given under #5 above.*

8. *For the retrospective probes, record the exact wording of the teacher's "bottom line" statement, as well as a brief note about the context in which it was said.*

An example might be, "That's what I'll do, have them write about the family" - *referring to decision made on page 14 with picture of father and sons.*

In this case, your retrospective probe becomes:

> "**What were you considering when** you pointed to the picture of the father and sons on page 14 and said "That's what I'll do, have them write about the family." "Can you recall what your thoughts were when you said that?"

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